CHAPTER 3

AFFECTED ENVIRONMENT

INTRODUCTION

The Monument Planning Area lies on the Snake River plains of southcentral Idaho between the Snake River and the central Idaho mountains. It extends from Bliss on the west to American Falls on the east, and from the Snake River on the south to the Craters of the Moon National Monument on the north. The planning area is characterized by uniform, gently sloping lava plains that rise in elevation from 2,675 feet in the Snake River Canyon near Bliss to over 5,900 feet on North Laidlaw Butte near the Craters of the Moon National Monument.

The climate of the planning area is a modified continental type influenced by Pacific air masses with cold, snowy winters and hot, dry summers. Precipitation generally follows elevation with lower amounts of precipitation at lower elevations, and higher amounts at higher elevations. Most of the 9 to 16 inches of annual precipitation are received during late fall, winter, and spring, while the summers are typically very dry. Snow is common from December through February. Wind is also common throughout the area with speeds in excess of 25 mph frequent during the spring months. Air quality is generally excellent, although air stagnation periods cause localized air quality problems during late fall and winter.

Surface water is very limited in the planning area. The Snake River flows along the south of the planning area with the Little Wood River and a short stretch of the Big Wood River on the north. Other natural water sources are scarce and seasonal. Several irrigation canals cross public land in the southwest of the planning unit. Water developments scattered throughout the planning area, primarily for livestock water, are the only other sources of surface water. These are typically small pit-type structures that dry up by early July.

The entire planning area consists of basalt flows from numerous volcanic vents. Individual lava flows, such as the Craters of the Moon flow, are as recent as 2,270 years (Kuntz et al.). The topography is generally flat to rolling with gentle slopes, but many of the volcanic vents have formed buttes that lend local relief to the lava plains. Steep, rugged canyons and spectacular waterfalls occur along the Snake River where landforms were sculpted by flood waters from ancient Lake Bonneville. The overflow of Lake Bonneville cut vertical channels through the basalt, scoured some areas, and left deposits in other areas along the southern edge of the planning area.

North of the flood impact zone and south of the more recent lava flows, good soils occur that support agriculture. Rock outcrops are common on fringe areas where soils are shallower, but many areas are rock-free. Fifteen towns with populations under 10,000 people are associated with the larger tracts of farmland in this part of the planning area.

FIRE MANAGEMENT

A 30-year average of 81 wildfires per year has burned 34,000 acres each year in the planning area. Actual acreage burned each year has varied widely in the last 30 years from a few hundred acres to over 300,000 acres. Ignition sources are 70 percent man-caused and 30 percent lightning-caused. Most man-caused fires occur where State Highways 24, 26, and 46, and U.S. Highway 93 are adjacent to public lands. Areas of public lands along the Union Pacific Railroad (UPRR) tracks and the public lands north of the Snake River near Twin Falls also have a very high incidence of man-caused fires.

Most of the lightning-caused fires occur along two main storm tracks. Thunder storms generally enter the planning area near Twin Falls. One storm track moves northward parallel to U.S. Highway 93. A second storm track goes northeast from Twin Falls toward the south end of the Great Rift lava flow. Most dry lightning and lightning-caused fires occur along the edges of these storm tracks. Starts caused by lightning directly in the path of a given thunder storm are often rained out.

All of the planning area has the same priority for fire protection except for the Great Rift Management Area, which is in a limited suppression category. In multiple fire situations, the areas with the largest "big fire" potential and the highest potential for resource damage are given priority, as determined by value-at-risk in the Normal Fire Year Plan. See Appendix B for more information.

Fire Ecology

The influences of wildfire on the vegetation of the planning area are shown on Map 6. The planning area is divided into six zones that reflect the fire history, present vegetation, and management implications common to a given area. A description of each of these zones in given is Appendix B.

The areas most prone to burning are Zones 1 and 2 (477,790 acres). These areas have an average burning frequency of at least once every 15 years and one zone within this area (Zone 1A; 90,970 acres) has a fire frequency of

every 10 years or less. Some of these frequently burned areas burn an average of once every five years. The most frequently burned areas are shown on Map 6.

Large burns have been common on the planning area since the early 1920s (Gerity 1969). Fire and heavy grazing during this period depleted the native vegetation and allowed the invasion of thousands of acres by cheatgrass. Cheatgrass is now a major component of the plant communities of 97 percent of the planning area (excluding new lava), or about 893,000 acres, and is the dominant plant species on about 24 percent of the planning area. Cheatgrass is highly flammable during the fire season (Hull 1965, Klemmedson and Smith 1964) and cheatgrass dominated communities have the capability to return to pre-burn plant compositions within two or three years after burning (Hull 1965). Observations in the most frequently burned areas of the Shoshone District indicate that cheatgrass communities can maintain their composition with fire frequencies of once every five years. However, annual burning can significantly reduce cheatgrass cover and frequency (Hull 1965; Young, Evans, and Robison 1972).

WILDLIFE

It is important to understand which factors have important effects on wildlife over most of the planning area and which do not. Wildlife habitat quality is currently subject to two major influences, largely beyond management control, that overwhelm other factors. These are frequent wildfires that destroy sagebrush and bitterbrush and subsequent domination of the habitat by cheatgrass, a species well-adapted to fire. Cheatgrass replaces valuable native grasses and forbs by out-competing them and increases the frequency of future wildfire, thereby seriously hampering the reestablishment of sagebrush and bitterbrush that are essential for so many species (See Appendix B and Map 6 for more details on fire ecology). This ecological situation combined with low precipitation (8 to 11 inches) and extreme scarcity of surface water (see Map 1) over most of the planning area renders the habitat marginal for most species. Only a few, notably the burrowing owl and long-billed curlew, appear to benefit from this habitat.

Another important factor influencing populations of big game and sage grouse is the loss of historical winter ranges over the years through conversion of land along the southern portion of the planning area to agriculture (private lands on Map 1). In severe winters with deep snow, animals are not able to move as far south to regions of lower elevations, higher temperatures, and lesser snow accumulation as they did in pre-settlement years. Thus, the animals are forced to winter not only farther to the north, but also in the zone of most frequent wildfire where brush cover is severely limited.

Two other factors beyond management control have had impacts on pronghorn populations--disease and accidental death of animals struck by trains. Because the pronghorn population is low, periodic loss of animals to these causes can substantially set back the growth of the herd.

In comparison to the above factors which limit population sizes of many species in the planning area, several more classic factors do not have important effects. Particularly, forage availability to big game and sage grouse is not limited by grazing levels or season of use by livestock. Currently, the forage is available to support greater populations of these species if the factors listed above were not limiting. Consequently, change in grazing management is not an important management consideration at this time.

In conjuction with livestock management, the range improvements being considered in the alternatives are, in many cases, beneficial to wildlife. In providing seedings to replace cheatgrass and in supplying new sources of water, wildlife will profit.

Each species that is important in the planning area is discussed below and in Chapter 4. It will be helpful to keep the above information in mind while evaluating these sections.

Bald Eagle (Endangered)

Since 1979 between 0 and 37 bald eagles have been counted in winter along the Snake River, which forms the southern boundary to the planning area (see Map 7). Bald eagles roost and perch on private land in this district, whereas they forage on and along the river. They will not be affected by land use decisions in the RMP.

Bliss Rapids Snail (Candidate Endangered)

A population of the Bliss Rapids snail (new species and genus) has been found under cobbles beneath the large waterfall in Box Canyon. This species is otherwise restricted to fast-flowing water in the Snake River below Salmon Falls Creek. The waterfall site is on private land, but the species could occur on public land within the canyon. The species requires a constant flow of water to survive. Creation of slack water or loss of water would destroy the population.

Given the similarity of habitats in Box Canyon and Vineyard Creek, it is conceivable that this species also occurs in Vineyard Creek at the base of the waterfalls below the outlet of Vineyard Lake.

Ferruginous Hawk (Candidate Threatened)

A single nest site is known in the planning area. Because they nest on the ground or on low outcrops and are very sensitive to disturbance at the nest early in the breeding season, current numbers are probably far below historic numbers. Ferruginous hawks will use artificial nest structures. Thus, the opportunity exists under all plan alternatives to increase the population.

Swainson's Hawk (Candidate Threatened)

No Swainson's hawk nest sites are known to exist on public land, but three sites have been located within 0.5 mile, and one within 1.5 miles, of public land. Groups of immature Swainson's hawk, numbering 10 to 70, move through the planning area in late summer. Thus, this species forages on public land, especially where agricultural land is nearby. Opportunities exist to increse the population through tree planting and providing artificial structures for nest sites, especially on Isolated Tracts near agricultural land.

Burrowing Owl (Sensitive)

Over 180 nest sites have been located on public land in the planning area and the breeding range is well defined (see Map 7). Burrowing owls are widespread in cheatgrass habitat where yellow-bellied marmots and badgers provide burrows. They occur more frequently where agricultural land and small patches of sagebrush are also available as foraging habitat. Nest sites in rock outcrops are most valuable because they are not easily destroyed. Over 20 nest sites have been destroyed by fire rehabilitation, plow and seed jobs, and by cattle trampling. The opportunity exists to increase owl numbers by providing artificial nest boxes, especially on Isolated Tracts, but also throughout the breeding range. Both wildfire and grazing provide the disturbed vegetation that this species prefers around the nest site.

Long-Billed Curlew (Sensitive)

Curlews are widely scatterd in low numbers across the southern portion of the planning area on public land (see Map 7). This species prefers the short,

disturbed vegetation that occurs over much of the area following grazing and wildfire. No limting factors have been defined and there will be little or no effect on this species in any alternative.

Shoshone Sculpin (Sensitive)

Populations of Shoshone sculpin were estimated to be 15,000 to 20,000 on public land in Box Canyon, and 20,000 in Blue Heart Springs (see Map 7). These are the second and third largest known poulations of the species and the largest known populations on public land. Habitat condition is excellent with populations completely filling the available habitat. Sculpin in Box Canyon are threatened by sedimentation from return irrigation flow, by soil disturbance in the canyon, and, most importantly, by potential diversion of water from the spring source on private land.

Ring-Necked Pheasant

Roughly 50,000 pheasants are believed to occur in the planning area where public lands and agricultural lands are adjacent. Habitat is good to excellent with public land providing winter and escape cover where sagebrush and pockets of riparian habitat occur. Good cover is especially important on isolated tracts of public land that provide the only cover in a local area dominated by agriculture. The protection of existing stands of sagebrush from wildfire and planned removal is needed to maintain and increase the population. The existing Isolated Tracts Habitat Management Plan (HMP) has the protection and creation of pheasant habitat as one of its main objectives.

Gray Partridge (Hungarian Partridge)

About 8,300 partridge are believed to occur in the planning area. Habitat requirements for this game bird are very similar to those for the ring-necked pheasant.

Sage Grouse

Sage grouse numbers have fluctuated between an estimated 1,000 to 17,000 birds since 1950. Currently, 350,000 acres of nesting habitat occur within a

two-mile radius of known leks in the planning area (see Map 7). Existing breeding habitat is in good to excellent condition from the brush standpoint, but is lacking in forbs. Experimental prescribed burns are being conducted on 13,000 acres in this habitat to increase forb production. Winter habitat (see Map 7) is in excellent condition due to the extensive area of dense sagebrush cover. Much of the historic breeding range between State Highway 75 and the Milner-Gooding Canal has been destroyed by recurring wildfire. This habitat could be restored if the brush would be protected until it again reaches the required height and density for sage grouse. Rapid suppression of wildfire is essential to preserving the remaining sage grouse habitat and to increasing brush cover in recently burned areas.

Pronghorn

An estimated 615 pronghorn occur widely in the planning area. Much of the current summer and fall habitat is of marginal quality due to a shortage of forbs and lack of water. Much of the winter range (see Map 7) is also marginal due to the loss of brush to recurring wildfires and the historic progressive loss of winter range to agriculture and urban development. Further, the winter range outlined (see map 7) is used mainly in typical or average winters. In severe winters with deeper snow, such as 1981-1982 and 1983-1984, pronghorn are forced farther south into even poorer habitat along the fringes of agricultural land. Water development, forb seedings, and the protection and increase of brush in the winter range is needed to increase populations.

Mule Deer

About 400 resident mule deer are estimated to occur in the planning area. These animals are widely scattered in low numbers. Year-round habitat for mule deer is generally marginal. This is because of climate and topography; thus, there is little or no potential for increasing numbers of resident deer. An estimated 1,600 mule deer winter in the planning area (see Map 7). Winter habitat is generally good due to the availability of sagebrush, rabbitbrush, and bitterbrush, as well as the cover provided by the topographic relief in the lava flows. The winter range outlined (see Map 7) is used only in typical winters. In more severe winters, such as 1981-1982 and 1983-1984, deer are forced farther south into poorer habitat along the edges of agricultural lands. Conversely, in unusually mild winters, such as 1976-1977, most deer may remain at higher elevations. Protection of brush in winter range from wildfire is needed to maintain this herd.

Hybrid Cutthroat/Rainbow Trout

Vineyard Creek is the only known spawning habitat for a unique hybrid trout (see Map 7). Population size is unknown. The habitat is presently threatened by sedimentation from irrigation return flow that crosses public land above the canyon (Thomas 1980).

Non-Game Species

An estimated 99,000 pairs of non-game birds from 73 species nest in the planning area, whereas at least 167 species use the area at some time during the year. Numbers and diversity of breeding birds are greatest in diverse habitats with a mature sagebrush component. Protection of these habitats from wildfire is necessary. Numbers and diversity of non-game birds is taken to be an indication of the status of other non-game groups such as reptiles and small mammals.

Riparian Habitat

Riparian habitat is very scarce in the planning area because of climate, topography, and soils. About nine miles of streambank along the Little Wood River, the only substantial riparian zone, were fenced between 1975 and 1983 to protect existing riparian habitat and allow the recovery of vegetation all along this reach. Nearly all public land along the Little Wood River is now protected. There are numerous small patches of riparian habitat, many less than one acre, along irrigation canals, the Snake River, natural playas, and reservoirs across the planning area. The most important of these have already been fenced to protect them from grazing. All Isolated Tracts with significant riparian habitat are to be retained in all alternatives.

Isolated Tracts

Currently, 87 tracts of land totalling 10,563 acres are being managed under the Shoshone Isolated Tracts Wildlife Habitat Management Plan (HMP) (see Map 8). These tracts are typically the best wildlife habitat in an area that is predominantly agricultural. Objectives of the HMP are to maintain or improve the habitat quality on these tracts, mainly for pheasant winter and nesting cover, but also for gray partridge, doves, passerine birds, raptors,

and other wildlife species. These tracts will be protected from unauthorized use (e.g., dumping, agricultural trespass) and will be open to recreational use, including hunting.

LIVESTOCK FORAGE

Grazing Management

The Monument Planning Area includes 910,046 acres of allotted public land (including 677 acres of National Wildlife Refuge) in 89 grazing allotments. In addition, there are 8,166 acres of Reclamation Withdrawal land within existing allotments. Since the Reclamation Withdrawal lands are controlled by another agency, they were not included in earlier adjudications and do not have grazing preference attached to them. The Bureau of Reclamation has assigned BLM the grazing management responsibility on some withdrawn lands. Unallotted tracts total 269,620 acres, consisting primarily of unproductive lava flows and isolated parcels of public land.

Existing grazing allotments include 26,482 acres of private land and 42,060 acres of State land within their boundaries. Some of the land controlled by permittees is offered for exchange-of-use and is managed in conjunction with the public lands; the rest is informally managed as part of the allotments.

The Canyon MFP, completed in 1974, identified 2,535 acres of public land within present allotments for disposal, primarily around the I-84/U.S. 93 interchange. Desert Land Entry and Carey Act applications also encumber 39,026 acres within grazing allotments.

There are presently 186 permittees in the planning area who control 149,135 AUMs of active livestock preference. Of the total active preference, 74,967 AUMs (50.3 percent) are sheep preference, 73,892 AUMs (49.6 percent) are cattle preference, and 109 AUMs (0.1 percent) are horse preference. There are 7 sheep allotments, 62 cattle allotments, 1 horse allotment, 4 cattle and horse allotments, and 11 cattle and sheep allotments in the planning area. In addition, four allotments have no established preference, kind of livestock, season of use, or grazing system. In 23 allotments, several operators run livestock in common, while the other 66 allotments are private allotments for a single operator. See Table D-1 in Appendix D for specific information about preference for each allotment.

Presently 49.8 percent of the allotted public acres and 52.8 percent of the total active preference are under allotment management plans (AMPs) or informal grazing systems. There are fifteen allotments with rest-rotation grazing systems, three allotments with modified rest-rotation grazing systems,

and eight allotments with deferred-rotation grazing systems. Generally, rest-rotation grazing systems have been successful, with less consistent success for deferred rotation systems. The remaining 59 allot- ments receive seasonal grazing, the impacts of which vary with the season of use. For definitions of these kinds of grazing management, see Appendix D, Grazing Systems.

The major seasons of use are from April 1 to June 30 and October 16 to December 31 for sheep; March 1 to June 30 for spring cattle use; May 1 to August 15 for summer cattle use; August 1 to December 31 for fall cattle use; November 1 to March 15 for winter cattle use; and April 1 to December 15 for season-long cattle use. Generally, spring cattle turnout is in April, fall cattle turnout is in October or November, and the closing date for season-long cattle allotments is in September or October, with some season-long allotments receiving fall extensions in most years. The actual length of time which sheep graze the area is determined primarily by accessibility and forage availability on the area and on nearby National Forest lands.

Based upon 1978 to 1982 average actual use, 32 percent of the forage was harvested in spring, with an additional 51 percent harvested under season-long grazing which includes spring use. Only 17 percent of the forage was harvested totally during fall and winter. Generally spring forage is in short supply in the area since private rangeland provides primarily winter forage and farmland provides useable forage primarily after harvest. Public land provides an important component of the annual forage base for over 150 livestock operators.

The area has an unusual situation in that 936 AUMs of active preference were assigned to the Wendell Trail, a designated sheep trailing route across the western portion of the planning area, rather than to specific areas of land (allotments). The intent was to accommodate annual sheep trailing without over-obligating forage in allotments along the route. Although Wendell Trail preference has been converted to active cattle preference within allotments upon several occasions, it carries no suspended preference for future increases. The approximate location of the Wendell Trail is shown on Map 10.

There is a continuing decline in sheep numbers in the planning area. In recent years, a significant amount of sheep use has been converted to cattle use.

Vegetation

A vegetative inventory was conducted in 1980-1982 in conjunction with a third-order soil survey. The inventory/survey determined the natural potential plant communities (range sites) based on Soil Conservation Service (SCS) methodology (USDA-SCS 1976). The vegetative inventory also determined present range condition, present vegetation types, and rated the observed

apparent trend of the allotted public lands of the Monument Planning Area. Range site descriptions and soil-vegetation correlation information are available at the Shoshone District Office.

Ecological condition is the relationship of a present plant community to the potential plant community for the site. It is an expression of the relative degree to which the kinds, amounts and proportions of plants in a plant community resemble the potential community. Ecological condition is a rating that does not consider suitability of a plant community for livestock, wildlife, or other resource uses. Seedings were given a condition rating on the amount of the seeded species in relation to the total production of the site.

The ecological condition classes do not necessarily imply a scale of values for particular uses. For example, poor ecological condition range provides good sheep forage since they prefer weedy annual forbs and small, tender grasses such as Sandberg bluegrass. On the other hand, crested wheatgrass seedings provide better spring and summer cattle forage since they green up early and stay green longer in summer than cheatgrass or native ranges. Fair and good condition classes have a good shrub component which may provide shade for livestock and habitat for shrub-dependent wildlife, but they often hinder livestock access to herbaceous forage. Ecological condition classes merely imply the degree of alteration in the plant community composition from that of similar undisturbed communities.

Four condition classes were assigned during the vegetative inventory: good, fair, poor, and seeded (refer to Appendix D, Methodology). Two percent (17,172 acres) of the allotted public lands is in good range condition, 8 percent (71,009 acres) is in fair condition, 70 percent (644,090 acres) is in poor condition, and 20 percent (180,394 acres) is seeded. Over half (348,500 acres) of the poor condition range has 5 percent or less of the potential plant community remaining and can be classified as highly disturbed. Condition class acreages by allotment are given in Table D-1, Appendix D, and ecological and seeded condition classes are shown on Map 10.

The major species on most of the poor condition range is cheatgrass (Bromus tectorum), with annual forbs, Sandberg bluegrass (Poa sandbergii), and remnants of native shrubs such as big sagebrush (Artemisia tridentata) and rabbitbrush (Chrysothamnus spp.). The fair and good condition range is found primarily in areas which have been protected from past repeated fires and overgrazing, such as lava bed areas and isolated pockets of soil within lava flows. The fair and good condition ranges have progressively more diverse and more productive native grasses, shrubs, and forbs, and fewer weedy annuals. Many of the seedings, which are primarily crested wheatgrass, originated from fire rehabilitation efforts.

The present vegetation of the Monument Planning Area can be characterized in six major plant communities: (1) basin big sagebrush, (2) Wyoming big sagebrush, (3) three-tip sagebrush, (4) gray rabbitbrush, (5) cheatgrass, and (6) crested wheatgrass. Minor vegetation types include Rocky Mountain juniper, mountain big sagebrush, green rabbitbrush, and riparian. Table D-2

in Appendix D lists the species occurring in each vegetation type, and Map 11 shows the locations of each vegetation type in the planning area.

Cheatgrass is the most common plant species on the planning area. It is the major component of the plant communities of about 24 percent of the planning area, and is abundant on 97 percent of the planning area (excluding new lava). The widespread presence of cheatgrass is due to an early history of heavy grazing and frequent wildfires (Peimeisel 1945; Hull and Pechanec 1947; Yensen 1980, 1981).

Cheatgrass was well established in the planning area by 1955 when permanent photo points were established for trend measurements. Photographs from eight of the nine photo points established at this time show vegetation with abundant cheatgrass. In 1982, retakes of the original photographs revealed essentially no change in the vegetative composition of five of the nine sites. Three sites were seeded to crested wheatgrass and the ninth site has remained in perennial vegetation.

Cheatgrass is now a permanent part of the ecology of the planning area (Klemmedson and Smith 1964, p. 236). It is highly competitive with native herbaceous species (Daubenmire 1940, 1942; Stewart and Hull 1949; Hulbert 1955) and is highly flammable. Its presence greatly inhibits succession toward the potential plant communities of the area by increasing fire frequencies, causing earlier burns (see Fire Ecology, Chapter 3) and by direct competition. Although cheatgrass has good forage qualities for livestock and wildlife during the late fall and early spring, it lacks the longer-lasting forage qualitites of perennial species during the late spring and summer months. In light of the agressive nature of cheatgrass, its flammability and the lack of perennial seed sources on areas dominated by cheatgrass, seeding remains the only practical method of restoring perennial forage to these areas.

Trend is the direction of change in ecological condition. Trend ratings for the planning area are based on long term photo points, permanent photo trend plots, and observed apparent trend ratings made during the 1980-1982 vegetation inventory. Presently, 21 percent (190,434 acres) of the planning area has an upward trend, 74 percent (678,387 acres) has a stable trend, and 5 percent (46,804 acres) has a downward trend. Trend ratings are shown on Map 9.

During the 1981 field season, the eastern one-half of the planning area was surveyed for the presence of threatened or endangered plant species. One species proposed for listing as "Endangered," the Picabo milkvetch, (Astragalus oniciformis Barneby) was discovered on sandy soils in association with basin big sagebrush. Another species proposed for listing as "Endangered" was found in meadows adjacent to the planning area, but its presence in the planning area is unlikely, due to the lack of meadow habitat. The inventory report by Inter-Mountain Research of Provo, Utah, and locations of plant populations are available at the Shoshone District Office.

Two relict vegetation communities have been identified in the planning area that have met the criteria of relevance and importance for identification as potential ACECs. These areas provide examples of vegetation communities that once occupied much larger areas.

One relict vegetation community, the Substation Tract, covers 440 acres and supports a good condition community of Wyoming big sagebrush/Thurber's needlegrass. Records indicate that the site has had little or no grazing since before 1959, and has not burned in over 100 years (Hugie 1959). The plant community is representative of a range site that once occurred on thousands of acres of the Snake River Plains in Idaho. The Substation Tract has the only known remaining relict community of its condition and size in the Shoshone District.

The University of Idaho has recognized the importance of this vegetation community in a letter dated January 17, 1983.* "The soils of the area would provide excellent benchmarks to study the effects of agricultural practices on soil alteration. The mantle of native natural vegeation makes this area extraordinarily valuable. Opportunities to set aside representative areas such as this with the original vegetation intact are rare--and may be our last chance to do so."

In October 1983, a report was completed by the Idaho Natural Area Coordinating Committee recommending the Substation Tract for research natural area designation (Caicco and Wellner 1983).

Carey Act applications have been filed on all 440 acres of the Substation Tract. Another threat to the vegetation community is burning. Although burning would not destroy the values of the tract as a relict area, these values would diminish with burning.

The second relict vegetation community, the Silver Sage Playa, covers ten acres of a small playa lake with a fair condition community of silver sagebrush/Nevada bluegrass. Examples of this community in fair or better condition are uncommon in this area. Silver sagebrush sites often serve as water sources, so most of them have been somewhat disturbed. The Silver Sage Playa shows signs of considerable disturbance.

The Silver Sage Playa is covered by a DLE application. Another threat to the vegetation community is burning. Burning would diminish the values of the tract as a relict area, but the vegetation would likely recover quickly.

LANDS

There are 1,178,989 acres of Federally-owned land under BLM management in the Monument Planning Area. In addition to these lands are several thousand

*Personnel communication from M. Hironaka, Professor, Department of Range Resources, University of Idaho, and M.A. Fosberg, Professor, Department of Plant, Soil, and Entomological Sciences, University of Idaho.

acres under Bureau of Reclamation withdrawal or withdrawals for power site purposes. The BLM has varying degrees of management on some of the withdrawn lands. This includes granting rights-of-way, mineral leases, patents, grazing permits, and mining law administration.

Other types of withdrawals or de-facto withdrawals are those for stock driveways, public water reserves, and land use classifications. Stock driveway and public water reserve withdrawals segregate the land against nonmetalliferous mineral entry and applications for entry that are discretionary with the Secretary of the Interior. The Multiple Use Classification segregates against Homestead, Desert Land, Indian Allotment entries, and public sale applications.

Appendix E contains a discussion of standard operating procedures for transfer of lands from Federal owenrship.

Agricultural

The vast majority of private land holdings in the planning area were obtained through agricultural entries such as the Desert Land Act, Carey Act, Reclamation Homestead Act, and the Stock Raising Homestead Act.

All of the current filings for agricultural development have been made under the Carey Act or the Desert Land Act. These filings cover 43,990 acres.

Sales of public lands under Section 203 of FLPMA may also be made for agricultural development. Parcels sold under this provision will be no larger than necessary to support a family-sized farm.

The availability of a water supply, sufficient to irrigate all the potential irrigable acres in an entry, is required. Nearly all proposed entries identify the water source as ground water from wells drilled into the Snake River Aquifer. Anticipated well depths average about 300 feet. As part of the water appropriation process, a water permit application and a well drilling permit must be approved by the State of Idaho, Department of Water Resources. The Snake River Aquifer is known to underlie all areas currently under application, but the depths to water and quantities available are unknown. In areas known to have a declining water table, the State of Idaho, Department of Water Resources, may designate a managemment area or a critical ground water area and restrict further development of the water. Further restrictions on development could occur as a result of litigation and proposed legislation in the State Legislature.

At the present time, no new water permits are being approved by the Idaho Department of Water Resources because of an Idaho Supreme Court ruling which granted Idaho Power Company a certain water right at Swan Falls Dam. This apparently subordinates much of the upstream water use to Idaho Power Company's Swan Falls right.

Electric powered pumps are normally used to energize the water and sprinkler systems. Idaho Power Company, the major utility company in the area, has had a moratorium on new electric well hookups since 1977. This has resulted in using less economical pumping units run on diesel or propane fuels. Pumping costs represent a major cost in crop production and the additional costs can adversely affect the economic feasibility of an operation.

Land for Local Government and Community Expansion

Shoshone is the only community in the planning area isolated by public lands that may limit community expansion. The community has shown a general downward population trend over the past 30 years, and nothing indicates a reversal in that trend. Although all other communities in the planning area are on a static to upward population trend, there are sufficient adjacent private lands available to accommodate most anticipated residential, commercial, and industrial expansion needs.

The greatest need for public lands by local government is for use as sanitary landfills, mineral material sources for construction and maintenance projects, and rights-of-way. Some public land sites have also been identified for recreation use and development. The Recreation and Public Purposes Act provides the authority to allow developments under either lease or lease with future possibility of purchase. Sale or lease provisions under Section 203 and Section 302 of FLPMA, respectively, may also be used. Mineral materials may be made available through sales or free use permits.

Ideally, sanitary landfills should be centrally located, have good, all-weather access, and be located such that other land values and uses will not be adversely affected. Two to three acres per 10,000 people per year is necessary where soils are from 10 to 15 feet deep. Soils, therefore, present the greatest limiting factor in determining suitability for sanitary landfill purposes. Very few sites larger than a few acres have soils of sufficient depth to provide the periodic covering necessary to meet State health standards required for sanitary landfills.

At the present time, Lincoln County and the communities of Gooding, Jerome, Eden, Hazelton, and Dietrich all operate sanitary landfills on public land. Existing and proposed sites under the R&PP Act encompass 1,120 acres.

Known Land Exchange, Sale, or Land Acquisition Proposals

The District receive many proposals to exchange private lands for public lands and requests to sell public land tracts. These actions may occur under

FLPMA provisions of Section 206 (exchanges) and Section 203 (sales). Section 205 of FLPMA allows the Secretary of the Interior to acquire non-Federal lands by purchase, exchange, or donation. Exchanges of private or State land for public lands may be considered only on lands included in a transfer category in an approved land use plan such as this RMP. Areas covered by these types of proposals are shown on Map 12 as Non-Bureau Disposal Proposals.

Isolated Tracts

Isolated tracts are those parcels of public land that are surrounded by private lands or are cut off from larger public land blocks by lava flows, canyons, rivers, or manmade features such as roads, canals, and railroads. In some cases, they may be an appendage of a larger block of land that extends linearly into the private lands. The tracts may vary in size from less than an acre to several hundred acres.

Many of these tracts have no physical or legal public access, while others may have legal access but very restricted physical access. Because of this, and their size, they do not receive the management attention as would a larger block of land. As a result, unauthorized use of them is common. They often create a management barrier to the surrounding private landowners and are the properties for which the public has expressed the greatest amount of interest in acquiring.

They are often needed for, or would enhance, a private land operation. Conversely, they sometimes offer significant public values such as wildlife habitat that would be preserved in public ownership.

Present Use Authorization

Land use authorizations include uses for occupancy for various purposes of limited duration, public works leases, airport leases, and rights-of way. Map 12 shows some of these authorizations.

The majority of the uses are for occupancy related to agriculture and include farming small tracts, storage of farm equipment and products, and bee hive locations. Other uses include sites for remote airstrips, caves for civil defense, maneuver and training areas for National Guard units, rights-of-way, and construction headquarters sites. They may be casual, short-term, one-time uses, or may include substantial site modification over a long period of time.

Long term rights-of-way include highways, roads, ditches, canals, oil and gas pipelines, power lines, telephone lines, communication sites, power

substations, airport beacon and nondirectional beacon sites, electric power generating sites, and material sites.

Cooperative agreements can be used to allow uses by Federal government entities and for such uses as aquifer recharge and flood control areas.

Rights-of-way needs are normally expressed by private and governmental entities through the filing of an applciation. The Bureau, on its own initiative, also identifies needs for the preservation of access and the protection of improvements. Much of the demand is tied to agricultural or residential development.

Right-of-way demand for communication sites is increasing. Three major sites within the planning area have the characteristics that most users desire and have, therefore, been developed for communication purposes. The sites are Kimama Butte, Flat Top Butte, and Notch Butte. Kimama Butte and Notch Butte are somewhat limited for future development because of their size and the potential impact on the BLM fire lookouts at those sites. Joint use of existing and future facilities reduces the clutter and number of structures at these sites, but may result in some problems such as interference with other users. Flat Top butte is a heavily used site, but, because of its size, can accommodate much more development. All new users are required to provide space for subsequent users in their facilities.

Major powerline rights-of-way cross the planning area in an east-west alignment with major substations located at Midpoint and Borah. North-south running powerlines also cross the area with Hunt and Midpoint being the major substations. Those powerlines of 138 kv to 500 kv capacity are shown on Map 12. Most are concentrated within a band a few miles wide and generally fit the corridor concept. Powerlines on public lands provide a rather large income to the Federal govbernment without causing major land use conflicts. The same powerlines on private lands can cause serious problems to land development, particularly to farming operations that depend upon wheel line or circular sprinkler irrigation systems.

Right-of-way corridors are those areas that already have significant development for a particular use, such as electrical power transmission lines, railroad and highway transportation systems, and gas pipelines. Rights-of-way in common will be used whenever possible. Those rights-of-way providing a general public benefit are considered a top priority use of public lands.

Due to the irregular pattern of development that may occur on private and public lands, customer service, electrical power lines, telephone lines, and access roads may not fit well with the existing system. Locations of new systems should conform to the public lands survey system subdivision lines most likely to represent future private land ownership boundaries.

Unauthorized Use

Over 100 percels of public land in the planning area have been identified as being used by private entities with no authorization. Most of the use is related to agriculture and includes farming, irrigation ditches, canals, sprinkler crossings, storage of equipment and agricultural products, permanent improvements, and dumping of rocks and debris. Much of the unauthorized use is of long standing and occurred unknowingly. In some cases, extensive development and improvement has occurred, while in others the use may be no more than casual. Disposal of these tracts can often enhance the private operation and solve management problems for the Bureau.

Other types of unauthorized use include mineral material removal, telephone lines, fences, and electric power transmission lines.

The trespassed areas may be included in use authorizations such as FLPMA permits and rights-of-way, and Sikes Act agreements for wildlife habitat improvement.

WILDERNESS

The BLM completed Idaho's intensive wilderness inventory in November 1980. The inventory identified six wilderness study areas (WSAs) with a total of 154,015 acres in the Monument Planning Area. The WSAs in the planning area include Shale Butte WSA (57-2), Sand Butte WSA (57-8), Raven's Eye WSA (57-10), Little Deer WSA (57-11), Bear Den Butte WSA (57-14), and Shoshone WSA (59-7). All of the WSAs are located on the central Snake River Plain in Blaine, Lincoln, and Minidoka counties of Idaho.

A brief description of each WSA is included in this chapter. Further detail on wilderness and other resources in each WSA can be found in Appendix F. The location of the WSAs is shown on Map 13.

Shale Butte WSA (57-2)

Size

This WSA includes 15,968 acres of BLM-administered public land with no private or State inholdings.